

The NOAA IEA Approach

Management Strategy Evaluation

MSE is useful to help resource managers consider the system trade-offs and potential for success in reaching a target which helps make informed decisions. It uses simulation through ecosystem modeling to evaluate the potential of different management strategies to influence the status of natural and human system indicators and to achieve our stated ecosystem objectives.

Analyze & Evaluate Uncertainty & Risk

Ecosystem analyses and models evaluate risk to the indicators and thus the ecosystem posed by human activities and natural processes. These methods incorporate the degree of uncertainty in each indicator's response to pressures. This determines incremental improvements or declines in ecosystem indicators in response to changes in drivers and pressures and to predict the potential that an indicator will reach or remain in an undesirable state.

Taking, Monitoring, and Assessing Action

Based on the MSE, an action is selected and implemented. Monitoring of indicators is important to determine if the action is successful; if yes, the status, trends, and risk to the indicators continue to be analyzed for incremental change; otherwise as part of adaptive management, the outcomes need to be assessed and evaluated to refine goals and targets or indicators towards achieving objectives.

Define EBM Goals & Targets

Define Ecosystem Management Goals & Targets

The IEA process involves manager engagement to identify critical ecosystem management goals and targets to be addressed through and informed by the IEA approach. The rest of the process is driven by these defined objectives. Engagement is continual throughout the entire IEA process.

Develop Ecosystem Indicators

Indicators represent key components in an ecosystem and allow change to be measured. They provide the basis to assess the status and trends in the condition of the ecosystem or of an element within the system. Indicators are essential for all subsequent steps in the IEA approach.

Assess Ecosystem

Ecosystem indicator data are assessed together to evaluate overall ecosystem status and trends relative to ecosystem management goals & targets. Individual indicators are assessed to determine the underlying cause for the observed ecosystem status & trends.

